

REMARKS

Applicants respectfully request further examination and reconsideration in view of the arguments set forth below. In the Office Action mailed January 12, 2005, claims 1-3, 6, 7, 11-14, 17-23 and 26-32 have been rejected. In response, the Applicants have submitted the following remarks. Accordingly, claims 1-3, 6, 7, 11-14, 17-23 and 26-32 are pending. Favorable reconsideration is respectfully requested in view of the amended claims and the remarks below.

Rejections Under 35 U.S.C. §103

Within the Office Action, claims 1-3, 6-7, 11-12, 14, 17-21, 23 and 26-31 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the textbook entitled "PACS: Basic Principles and Applications" by Huang (hereinafter Huang). The Applicants respectfully disagree with this rejection.

Huang teaches the basic principles of PACS systems. Specifically, Huang teaches imaging devices sending images to a PACS server, which in turn sends the images to various display work stations. Huang also teaches the display work stations having the ability to send query/retrieve (Q/R) signals to the server to prompt the server to send images to the display work station [Huang, page 285, Figure 10.8]. As is stated in the Office Action, Huang does not explicitly specify that three-dimensional imagery construction renderings are generated from at least one of multi-plane reconstruction (MPR), multi-plane volume reconstruction (MPVR), and maximum intensity pixel (MIP) projection. Also as recognized by the Office Action, Huang also does not explicitly disclose that the PACS workstation is configured to provide the PACS server with a signal representative of a three-dimensional rendering produced by the display.

The present invention teaches an image management system including an image manager having a plurality of inputs and outputs, wherein the inputs are configured to receive image information signals from an image device, and the outputs are configured to provide image output signals to an image workstation. The image workstation is

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configured to construct three-dimensional image renderings from the two-dimensional image slices included in the output signal. Furthermore, the system of the present invention teaches that the image workstation has an output coupled to the image manager, wherein the image workstation is configured to provide the image manager with a signal representative of the three-dimensional rendering through this output.

Within the Office Action it is stated that the feature of the PACS workstation being configured to provide the PACS server with a signal representative of the three dimensional rendering would have been obvious in Huang. The Applicants respectfully disagree with this rejection, and respectfully submit that the opposite conclusion should be drawn. Referring to page 274 and 285, as well as Figure 10.8 of Huang, the Applicants respectfully submit that the teachings of Huang show that the archive server stores images and is configured to send those images to display workstations upon request from the display workstation. Referring to Table 10.1, the "WSREQ" handles and retrieves requests from the display process at the display workstations, and the "display" acknowledges archive server for images received. Furthermore, referring to Figure 10.8, the archive server supports Q/R, thereby handling all Q/R requests from the display workstations, and in response, sends the appropriate images to the display workstations. The Applicants respectfully submit that the Huang reference thoroughly and specifically discloses the display workstation's ability to query the archive server for images, and that the capability of the display workstation to send any signal to the archive server is limited to this query request. Therefore, the Applicants respectfully submit that if the signal and storage of 3D renderings from the display workstation to the archive server were indeed obvious, they would have been taught on at least pages 274 and 275 in the Huang reference.

Furthermore, and more importantly, the Applicants respectfully submit that nowhere in the Huang reference is it taught that Huang is even capable of storing a 3D rendering in the archive server. For at least these reasons, the Applicants respectfully submit that the feature of the PACS workstation being configured to provide the PACS

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server with a signal representative of a three-dimensional rendering from the workstation is indeed not obvious.

Within the Office Action it is also stated that official notice is taken that at least one of MPR, MPVR, and MPE projection were exceedingly well known types of three-dimensional imagery construction algorithms. The Applicants respectfully disagree with this rejection, and hereby submit that only in limited circumstances, is it appropriate for an Examiner to take official notice of facts not on the record or to rely on "common knowledge" in making a rejection, and that such rejection should be judiciously applied [MPEP §2144.03].

The Applicants respectfully submit that official notice unsupported by documentary evidence should only be taken by the Examiner over the facts asserted to be well known, or to be common knowledge in the art or capable of instant and unquestionable demonstration as being well known. *Id.* It would not be appropriate for the Examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well known. For example, assertions of technical facts in the areas of esoteric technology or specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard and pertinent art. *In re Ahlert*, 424 F.2d at 1091, 165 USPQ at 420-21.

The Applicants respectfully submit that because the present invention claims that the three-dimensional image reconstruction rendering are generated from such esoteric technology or specific knowledge of the prior art, that a citation to some specific reference work recognized as standard in the pertinent art is required.

The independent claim 1 is directed to an image management system comprising the components as described above, wherein the PACS workstation is configured to construct three-dimensional image renderings from the two-dimensional image slices by at least one of MPR, MPVR, and MIP projection and that the PACS workstation has an output coupled to the PACS server and is configured to provide the PACS server with a

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signal representative of the three-dimensional rendering. As described above, the ability of the PACS workstation being configured to construct three-dimensional renderings from the two-dimensional image slices by at least one of MPR, MPVR, and MIP projection and the PACS workstation having an output coupled to the PACS server and configured to provide the PACS server with a signal representative of the three-dimensional rendering is not obvious in light of Huang. For at least these reasons, the independent claim 1 is allowable over the teachings of Huang.

Claims 2-3, 6-7 and 11-12 are dependent upon the independent claim 1. As discussed above, the independent claim 1 is allowable over the teachings of Huang. Accordingly, claims 2-3, 6-7 and 11-12 are also allowable as being dependent upon an allowable base claim.

The independent claim 14 is directed to a method of producing a rendering of a three-dimensional object from a plurality of two-dimensional image information files, and the independent claim 23 is directed to a medical imaging system. The Applicants respectfully submit that the independent claims 14 and 23 are allowable over Huang for the same reasons that independent claim 1 is allowable over the teachings of Huang.

Claims 17-21 and 26-31 are dependent upon the independent claims 14 and 23, respectively. As discussed above, the independent claims 14 and 23 are allowable over the teachings of Huang. Accordingly, claims 17-21 and 26-31 are also allowable as being dependent upon an allowable base claim.

Within the Office Action, claims 13, 21 and 32 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the combination of Huang in view of U.S. Patent No. 6,206,566 to Schuetz (hereinafter Schuetz). Claims 13, 21 and 32 are dependent upon the independent claims 1, 14 and 23, respectively. As discussed above, the independent claims 1, 14 and 23 are allowable over the teachings of Huang. Accordingly, claims 13, 21 and 32 are also allowable as being dependent upon an allowable base claim.

For at least these reasons, Applicants respectfully submit that all of the claims are now in a condition for allowance and allowance at an early date would be

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appreciated. Should the Examiner have any questions or comments, they are encouraged to call the undersigned at 414-271-7590 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,

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